DRAFT
DEPARTMENT OF ECOLOGY
NATIONAL POLLUTANT DISCHARGE ELIMINATION SYSTEM
NPDES GENERAL PERMIT FOR DAIRIES
FACT SHEET
October 18, 1999

A. ACTTIVITY

A dairy operation is defined as a facility engaged in the commercial production of milk from dairy cows. The dairy facility includes the animal confinement area, milking parlor, animal passage ways, pasture, and fields where manure and wastewater are applied and utilized. There are approximately 755 dairies in Washington with a total of 260,000 cows. The average dairy has 345 cows, the largest in the state has several thousand cows.

B. APPLICANTS

Any Dairy Animal Feeding Operation defined under RCW 90.64.010(9) that meets the definition of a Concentrated Dairy Animal Feeding Operation under RCW 90.64.010 (8) or is designated a Significant Contributor of Pollution under RCW 90.64.020 or meets the definition of a Concentrated Animal Feeding Operation identified in 40 CFR Part 122.23 is required to obtain coverage under this general permit or obtain an individual permit.

A general discharge permit is written to cover similar types of discharges from similar facilities. An individual discharge permit is tailored specifically for an individual discharger or facility. Dairy operations that require site specific conditions to protect water quality may need to be issued individual permits.

Section 301(a) of the Federal Clean Water Act (CWA) provides that the discharge of pollutants from all point sources, including dairy operations, to surface waters is unlawful except in accordance with an NPDES permit. The State Water Pollution Control Act, RCW 90.48.160, requires any person who conducts a commercial or industrial operation of any type which results in the disposal of liquid or solid waste material into waters of the state to obtain a permit. Waters of the state, defined in RCW 90.48.020, include both surface and ground waters.

C. APPLICABLE WATER QUALITY STANDARDS

Classifications of surface waters range from Class AA to Class C and Lake Class. Applicable surface water quality standards include fecal coliform, dissolved oxygen, pH, temperature and ammonia. Characteristic uses include water supply, stock watering, fish, shellfish and crustaceans migration, rearing, spawning and harvesting, wildlife habitat, recreation and commerce and navigation (Chapter 173-201A WAC).

Chapter 173-200 WAC defines the states antidegradation policy for groundwater. In addition, this rule contains narrative ground water standards and criteria for nitrate as well as many other contaminants. This rule uses the antidegradation policy, narrative standards and criteria to provide for the protection of all existing and future beneficial uses of groundwater. Generally, these uses are protected at levels below those provided for in the criteria. If it is determined to be in the overriding pubic interest and all known and available and reasonable treatment (AKART) has been applied before contaminants enter groundwater, degradation of existing and future beneficial uses may be allowed on a case by case basis.

D. TYPE AND QUANTITY OF DISCHARGE

1. Type of Discharge

Animal manure, wash down water, contaminated storm water, and silage leachate, collectively called process wastes, are the primary sources of wastes being regulated under this permit. Wastes are generated in the animal confinement area. Wastes are stored throughout the non-growing season. During the growing season manure and wastes may be applied to fields as a beneficial nutrient source.

Contamination of surface and ground water can occur due to improper collection and/or improper storage of wastes, contamination of storm water runoff, undersized or leaking waste storage facilities, improper timing or over-application of wastes, or improper containment of silage effluent.

The most commonly recognized contaminants or effects associated with dairy wastewater discharges include suspended solids, organics, fecal coliform bacteria, nitrogen, phosphorus, and biochemical oxygen demand (BOD).

Nutrients such as nitrogen and phosphorus, can cause increased aquatic plant growth. Decomposition of algae and plants can decrease dissolved oxygen levels. In addition, the biochemical oxygen demand of organic waste depletes dissolved oxygen in water. Low dissolved oxygen levels in streams and lakes can cause fish kills in surface waters.

Bacteria, viruses, and parasites found in animal waste can increase the risk of waterborne diseases. Fecal coliform bacteria are used as a biological indicator to determine water quality impact. In fresh water, high fecal coliform levels can cause a threat to public health, and restrict recreational, industrial, domestic, and agricultural water use. In marine water, high fecal coliform levels necessitate the closure of shellfish beds restricting recreational use and causing adverse economic impact to shellfish growers.

Inorganic forms of nitrogen are taken up by plants as nutrients when wastes are applied to cropland. Excessive or improper application of wastes and improper storage of wastes can cause runoff to surface water or leaching to ground water. High ammonia levels in surface water can be toxic to fish. High nitrate levels in drinking water can be toxic to humans, especially infants.

2. Characterization of Industry Waste Management

The U.S. Soil Conservation Service (SCS) and local conservation districts (CD) first began planning for waste management in the late 1960's. The primary focus was to keep noncontact waters (clean waters) from livestock confinement areas. In the late 1970's and early 1980's SCS and the CD's began to encourage and plan for long term storage of wastes including diversion, collection, transfer and application. The SCS was re-named the U.S. Natural Resources Conservation Service (NRCS) in about 1995.

Under the Washington State 1998 Dairy Nutrient Management Act (Chapter 90.64 RCW), all dairy farms licensed by the state Department of Agriculture are required to have comprehensive nutrient management plans approved by their local conservation district by July 1, 2002. The Act also requires that the dairy producer and local conservation district both certify these plans are fully implemented by December 31, 2003.

The 1998 Act also required the Washington Conservation Commission to develop minimum elements that all of the nutrient management plans must contain. These minimum elements were approved by the Conservation Commission on December 2, 1998. The minimum elements incorporate the technical specifications contained in the NRCS Field Office Technical Guide.

Based upon the 1998 dairy farm registration process conducted by Ecology the dairy industry reported 64% of all dairy farms have nutrient management plans and 54% of all farms are fully implementing a nutrient management plans. However, a very small percentage of these nutrient management plans have been formally approved or certified under Chapter 90.64 RCW.

3. Rate and Frequency of Proposed Discharge

Surface water discharges will only be allowed only when chronic or catastrophic events cause an overflow of process wastewater from facilities designed, constructed and operated to contain all process generated wastes and wastewater plus average annual precipitation, minus evaporation, plus the runoff from a 25-year, 24-hour rainfall event for that location.

Land utilization of process wastes is authorized provided it is conducted in accordance with the specific nutrient management plan developed for that dairy and is conducted such that violations of state Ground Water Quality Standards (Chapter 173-200 WAC) do not occur.

E. TECHNICAL GROUNDS FOR SETTING EFFLUENT LIMITS

1. Technology Based Limits

a) Surface Water

The Federal Clean Water Act (CWA) of 1977, set forth various levels of treatment that must be achieved by dischargers by specific dates.

Treatment standards for confined animal feeding operations including dairy operations, are specified in 40 CFR Parts 412.13 and 412.15. These technologies form the basis for federal effluent limitations and are defined as best practicable control technology currently available (BPT) and best available technology economically achievable (BAT).

By July 1, 1977 concentrated animal feeding operations were required to achieve compliance with effluent limitations representing best practicable control technology (BPT). BPT for concentrated animal feeding operations requires no discharge of process wastewater to navigable water bodies except for precipitation events in excess of the 10-year, 24- hour, storm event for the location of the point source.

By July 1, 1984, dischargers were required to achieve compliance with effluent limitations representing the application of best available technology economically achievable (BAT). BAT requirements for dairy operations allow no discharge of process wastewater pollutants to navigable waters.

However, process wastewater pollutants in the overflow may only be discharged to navigable waters when chronic or catastrophic events cause an overflow of process wastewater from facilities designed, constructed and operated to contain all process generated wastes and wastewater plus average annual precipitation, minus evaporation, plus the runoff from a 25-year, 24-hour rainfall event for that location.

40 CFR Part 122.23 and Chapter 90.64 RCW specify that concentrated animal feeding operations are point sources subject to the NPDES permit program. Concentrated animal feeding operation is defined as an animal feeding operation where one of the following criteria are met:

a. Has more than 700 mature dairy cattle (whether milked or dry cows) that are confined; or

b. Has more than 200 mature dairy cattle (whether milked or dry cows) that are confined from which pollutants are discharged into waters of the State through a manmade ditch, flushing system or other similar man-made device or pollutants are discharged directly into waters of the state which originate outside of and pass over, across, or through the facility or otherwise come into direct contact with the animals confined in the operation, or

c. Is designated as a Significant Contributor of Pollution by the Director after a site inspection in accordance with RCW 90.64.020.

No dairy animal feeding operation is a concentrated animal feeding operation if such dairy animal feeding operation discharges to surface waters only in the event of a 25-year 24-hour storm event.

The State Water Pollution Control Act, RCW 90.48.010 requires the "...use of all known, available, and reasonable methods by industries and others to prevent and control the pollution of the waters of the State of Washington". Surface water discharges will only be allowed only when chronic or catastrophic events cause an overflow of process wastewater from facilities designed, constructed and operated to contain all process generated wastes and wastewater plus average annual precipitation, minus evaporation, plus the runoff from a 25-year, 24-hour rainfall event for that location

CAFO's with more than 1,000 animal units (700 mature dairy cattle) are classified as an industrial activity under the federal Clean Water Act industrial stormwater regulations (40 CFR 122.26(b)(14)(i)) because effluent limitations have been established for these facilities under 40 CFR 412.13. Compliance with the surface water effluent limitations in this permit constitutes compliance with NPDES stormwater regulations for these facilities. CAFO's with less than 1,000 animal units (700 mature dairy cattle) are not subject to NPDES stormwater regulations associated with industrial activity because the federal effluent guidelines for feedlots do not apply to these facilities.

b) Ground Water

The State's ground water antidegradation policy stated in WAC 173-200-030 requires the following:

1) all existing and future beneficial uses of ground water will be protected,

2) high quality waters designated as an outstanding resource must be protected, and

3) existing high water quality cannot be degraded unless all known, available, and reasonable methods of prevention, control, and treatment (AKART) are applied to the wastewater and the overriding public interest is being served. The resulting degradation cannot be to a level that would degrade drinking water quality.

The Department has determined that AKART for dairy facilities is defined as follows:

a. Development of a nutrient management plan meeting the minimum elements established under RCW 90.64.026(2) that is approved by the local conservation district under RCW 90.64.026(5) and is also certified as fully implemented by the local conservation district and permittee under RCW 90.64.026(9) and is adequate for the existing dairy herd size.

b. All new waste storage facilities identified in a new or updated animal waste management plan must be constructed and operated in accordance with the dairy's nutrient management plan consistent with conditions (S4) of the permit.

F. PERMIT CONDITIONS

1. EFFLUENT LIMITATIONS

a) Surface Water Effluent Limitations

Surface water discharges will only be allowed when chronic or catastrophic events cause an overflow of process wastewater from facilities designed, constructed and operated to contain all process generated wastewater plus average annual precipitation, minus evaporation, plus the runoff from a 25-year, 24-hour rainfall event for that location.

b) Ground Water Effluent Limitations

The permittee shall apply process wastes to lands as specified in the dairy nutrient management plan written specifically for that dairy operation. Process wastes discharges, including seepage from waste storage lagoons and leachate from silage, shall not violate State Ground Water Quality Standards (Chapter 173-200 WAC).

Contaminant concentrations found in saturated soils where those contaminants are chemicals or nutrients that have been applied at agronomic rates for agricultural purposes if those contaminants will not cause pollution of any groundwater below the root zone are exempt from all requirements of Chapter 173-200 WAC.

2. DAIRY NUTRIENT MANAGEMENT PLANS

a) Plan Elements

All dairies covered under this permit shall have a current nutrient management plan meeting the minimum elements established under RCW 90.64.026(2) that is approved by the local conservation district under RCW 90.64.026(5) and is also certified as fully implemented by the local conservation district and permittee under RCW 90.64.026(9) and is adequate for the existing dairy herd size.

Dairies that do not have a current nutrient management plan typically have up to six months from the date of permit coverage to develop such a plan, and up to an additional eighteen months to implement such a plan. The exact timelines will be specified by Ecology in an administrative order. The availability of financial and technical assistance may be considered when establishing the specific timelines for individual dairy farms.

Regulatory agencies cannot establish compliance schedules in permits which extend beyond the statutory deadlines for meeting technology-based limitations. Ecology has determined that the performance standards in the draft permit represent application of BAT/BPT. However, discharges from some dairy farms have not been regulated by NPDES permits in Washington State. Ecology anticipates that the industry as a whole will require a reasonable period of time to fully implement the BMPs and construct necessary wastewater collection, storage, and land application facilities. Therefore, Ecology proposes to exercise its prosecutorial discretion in enforcing compliance with some conditions of the permit. This strategy does not preclude Ecology from initiating action determined necessary during the two year period.

It should also be noted that under the 1998 Dairy Nutrient Management Act all dairy farms licensed by the state Department of Agriculture are required to have local conservation districts approve their nutrient management plan by July 1, 2002. Also, both the conservation district and dairy producer are required to certify by December 31, 2003 the plan is fully implemented. Failure to meet these deadlines can result in the issuance of monetary penalties by Ecology under RCW 90.64.030(9).

b) Plan Compliance

Upon completion and implementation of a dairy nutrient management plan, any dairy operation covered by this general permit must, at all times, comply with the terms and conditions of that dairy nutrient management plan. The application and/or discharge of any process wastes more frequently than, at a concentration in excess of, or at times not specified in the nutrient management plan shall constitute a violation of the terms and conditions of this permit.

3. WASTE STORAGE FACILITIES

All new waste storage facilities constructed after the issuance date of this permit that are identified in a new or updated animal waste management plan shall be sited, designed, constructed, operated consistent with the dairy's nutrient management plan consistent with Condition (S3) of the permit.

4. MONITORING, REPORTING AND RECORD RETENTION REQUIREMENTS

a) Monitoring Requirements

If a discharge to surface waters occurs in violation of the Surface Water Effluent Limitation (Permit Condition F.1.A. of the Fact Sheet) the permittee shall record the following information:

a. A description and cause of the discharge;
b. The period of discharge including dates, times, and duration of discharge;
c. An estimate of discharge volume;
d. Name or location of receiving water; and
e. Corrective steps taken if appropriate, to reduce, eliminate or prevent reoccurrence of the discharge.

b) Reporting Requirements

1. If a discharge to surface water occurs that is not allowed by the Surface Water Effluent Limitaiton (Conditin S2.A) the permittee shall notify the appropriate Department of Ecology office within 24 hours of the discharge. Phone numbers and contacts for each office are as follows:

Bellingham Field Office	(360) 738-6259
Central Region	(509) 575-2490
Eastern Region	(509) 456-2926
Northwest Region	(425) 649-7000
Southwest Region	(360) 407-6300

The permittee shall submit a written report within five (5) days to the appropriate Department of Ecology office. The information to be submitted is listed in the monitoring requirements of this permit.

2. The permittee shall report immediately to the appropriate Department of Ecology Office any significant physical failure at any time of a waste retention structure required under this permit. .

c) Retention of Records

All information required by this permit shall be maintained and available to the Department of Ecology for a period of three years.

5. PREVENTION OF SYSTEM OVERLOADING

Animal herd size shall not exceed the capacity of the waste storage facilities for the dairy. The permittee shall update its dairy nutrient management plan, update all system components identified as being in need of upgrading, and shall provide a written copy of that updated dairy nutrient management plan to the appropriate Department of Ecology office prior to increasing the number of animals over the herd size identified in the existing dairy nutrient management plan.

6. TERMINATTON OF COVERAGE

The owner of a concentrated dairy animal feeding operation may request that coverage under this general permit be terminated. The request must be in writing and must be accompanied by the following:

a. A copy of the current dairy nutrient management plan; and
b. (i) A statement signed by the owner that all waste management facilities and nutrient management practices have been installed and have been in operation for not less than 36 months, and (ii) that there has not been a violation of permit Condition S2. for the past 36 consecutive months.

Ecology will respond to the request for termination by conducting a site inspection and a review of the permit file. A written determination either terminating coverage under the general permit or denying the request will be sent to the permittee.

G. PROCEDURES FOR FORMULATION OF FINAL DETERMINATIONS

Interested persons are invited to submit written comments regarding the proposed general permit. All comments should be submitted within forty-five (52) calendar days of the date of the public notice if they are to be considered in the formulation of final determinations regarding this permit. Comments should be sent, in writing, to:

Department o f Ecology, Water Quality Program
P.O. Box 47600
Olympia, WA 98504-7600
Attn: Phil KauzLoric
Phone number: (360) 407-6413
E-Mail: pkau461@ecy.wa.gov

Four public hearings on the draft general permit will be held beginning November 23, 1999. Comments on the permit may be given at the public hearings.

Comments will be considered and a final permit determination made. A responsiveness summary will be prepared and available for public review.

If the final determination on the permit remains substantially unchanged from that published in the public notice, a copy of the final determination shall be forwarded to all persons who submitted written comment or gave public testimony regarding the permit. If the final determination is substantially changed, public notice shall be given.

The proposed general permit, fact sheet, and related documents are on file and may be inspected and copied between the hours of 8:00 a.m. and 4:30 p.m., weekdays, at the following Department of Ecology offices:

Water Quality Program
300 Desmond Drive
Lacey, WA 98504

Northwest Regional Office
3190 – 160th Avenue SE
Bellevue, WA 98008-5452

Eastern Regional Office
North 4601 Monroe, Suite 100
Spokane, WA 99205-1295

Southwest Regional Office
300 Desmond Drive
Lacey, WA 98504

Central Regional Office
15 West Yakima Avenue
Yakima, WA. 98902-3401

Bellingham Field Office
1204 Railroad Avenue, #200
Bellingham, WA. 98225

APPENDIX A

A list of dairies statewide is available upon request.